

I claim:

1. A presence notification method for a computer interface operatively coupled to a system comprising a private branch exchange (PBX) and a first PBX phone, the
5 presence notification method comprising the steps of:
 receiving from the PBX a first message indicating an off-hook state of the first
 PBX phone;
 consulting a subscriber table including an identity of one or more presence-state
 subscribers; and
10 transmitting a second message to at least one of the one or more presence-state
 subscribers indicating the off-hook state of the first PBX phone.
2. The presence notification method of claim 1, wherein the computer interface is
resident in an Internet Protocol (IP) network.
- 15 3. The presence notification method of claim 1, wherein the second message is a
presence-state message.
4. The presence notification method of claim 3, wherein the presence-state message is a
20 session initiation protocol (SIP) instant message.
5. The presence notification method of claim 1, wherein first message is a computer
telephony integration (CTI) event message.
- 25 6. The presence notification method of claim 5, wherein the CTI event message is
generated using a protocol selected from the group consisting of: Telephony
Application Programming Interface (TAPI) protocol, Telephony Services Application
Programming Interface (TSAPI) protocol, and the Computer Supported
Telecommunications Applications (CSTA) protocol.

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7. The presence notification method of claim 5, wherein the CTI event message is received indirectly via a CTI server.

5 8. The presence notification method of claim 1, wherein second message is an on-phone presence-state notification message.

9. The presence notification method of claim 1, wherein the method further comprises, prior to the receiving step, the step of transmitting to the PBX a registration event message comprising a network address for the computer interface.

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10. The presence notification method of claim 1, wherein the method further includes the steps of:

receiving from the PBX a third message indicating an on-hook state of the first PBX phone; and

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transmitting a fourth message to at least one of the one or more presence-state subscribers indicating the on-hook state of the first PBX phone.

11. A media session method for a first computer interface operatively coupled to a system comprising a private branch exchange (PBX) and a second computer interface, wherein the first computer interface is associated with a first PBX phone and the second computer interface is associated with a second PBX phone, the concurrent media session method comprising the steps of:

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receiving a first message signifying that the second PBX phone is calling the first PBX phone;

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transmitting a second message from the first computer interface to the second computer interface requesting a media session;

determining whether the media session request has been accepted; and

establishing a media session between the first computer interface and the second computer interface if the session request message has been accepted.

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12. The media session method of claim 11, wherein the first message comprises an extension number associated with a second PBX phone used by the first computer interface to generate the second message.
- 5 13. The media session method of claim 12, wherein the second message comprises a universal resource identifier with an extension number of the second PBX phone.
14. The media session method of claim 11, wherein the media session is a concurrent media session conducted in parallel with telephonic communication between the first
10 PBX phone and the second PBX phone.
15. The media session method of claim 11, wherein the media session is selected from the group consisting of: an instant message session, a text chat session, a multimedia session, a computer GUI interface sharing session, and a combination thereof.
- 15 16. The media session method of claim 11, wherein the media session is a SIP session.
17. The media session method of claim 11, wherein the media session is a text chat session.
- 20 18. The media session method of claim 17, wherein users at the first computer interface and second computer interface may manually escalate from the text chat session to a second media session.
- 25 19. The media session method of claim 11, wherein the first message is a CTI event message.
20. The media session method of claim 11, wherein the step of determining whether the media session request has been accepted comprises the step of receiving an SIP OK
30 message.

21. A call routing method for a first computer interface operatively coupled to a system comprising a private branch exchange (PBX) and a first PBX phone, the call routing method comprising the steps of:
- 5 receiving from the PBX a first message indicating an incoming call to the first PBX phone;
- determining from a call routing table maintained by the first computer interface an incoming call response to the incoming call; and
- transmitting to the PBX a group of one or more messages based on the incoming call response.
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22. The call routing method of claim 21, wherein the group of messages comprises a message answering the incoming call.
23. The call routing method of claim 21, wherein the group of messages comprises a
- 15 message causing the PBX to discontinue a ring signal to the first PBX phone.
24. The call routing method of claim 21, wherein the group of messages comprises a message causing the PBX to transfer the incoming call to a second PBX phone.
- 20 25. The call routing method of claim 21, wherein the group of messages comprises a message causing the PBX to transfer the incoming call to the first computer interface.
26. The call routing method of claim 25, wherein the method further includes the step of
- 25 establishing a voice-over-IP session between the PBX and the first computer interface.
27. The call routing method of claim 21, wherein the group of messages comprises a message causing the PBX to transfer the incoming call to a client.
- 30 28. The call routing method of claim 27, wherein the client is a SIP user agent operatively coupled to the system.

29. The call routing method of claim 21, wherein the group of messages comprises a message causing the PBX to terminate the incoming call and transmit an instant message.

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30. The call routing method of claim 29, wherein the instant message is directed to a second computer interface identified based upon a phone number associated with the incoming call.

10 31. The call routing method of claim 21, wherein the call routing table comprises call processing rules structured as a function of the time and the day the incoming call is received, the telephone number or extension associated with the incoming call, and the presence-state of the user associated with the first PBX phone.

15 32. A call transfer method for a first computer interface operatively coupled to a system comprising a private branch exchange (PBX) and a first PBX phone, the call transfer method comprising the steps of:

transmitting to the PBX a first message for transferring a telephone call associated with the first PBX phone;

20 establishing a voice-over-IP session between the PBX and the first computer interface; and

replacing the telephone call to first PBX phone with a call to the first computer interface via the voice-over-IP session.

25 33. The call transfer method of claim 32, wherein the first message is a CTI event message.

34. The call transfer method of claim 32, wherein the first message comprises a universal resource identifier associated with the first computer interface.

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35. The call transfer method of claim 32, wherein the step of establishing a voice-over-IP session comprises the steps of:

receiving a voice-over-IP session request message from the PBX; and
transmitting a voice-over-IP session acceptance message.

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36. The call transfer method of claim 35, wherein the session request message is an SIP INVITE message and the session acceptance message is an SIP OK message.

37. A call transfer method for a first computer interface operatively coupled to a system comprising a private branch exchange (PBX) and a first PBX phone, the call transfer method comprising the steps of:

transmitting to the PBX a first message for transferring a voice-over-IP session associated with the first computer interface and PBX; and
establishing a telephone call associated with the first PBX phone; and
terminating the voice-over-IP session between the PBX and the first computer interface.

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38. The call transfer method of claim 37, wherein the first message is a CTI event message.

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39. The call transfer method of claim 37, wherein the first message comprises an extension number associated with the first PBX phone.

40. The call transfer method of claim 37, wherein the step of establishing the voice-over-IP session comprises the step of transmitting a private digital signals and voice (PDSV) signal to the first PBX phone.

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41. A private branch exchange (PBX) call control method for a first computer interface operatively coupled to a system comprising a PBX and a first PBX phone, the PBX call control method comprising the steps of:

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receiving from the PBX a first message indicating the presence of a telephone call associated with the first PBX phone; and
transmitting to the PBX a call control message.

5 42. The PBX call control method of claim 41, wherein the first message is a CTI event message.

43. The PBX call control method of claim 41, wherein the first message is a call hold command instructing the PBX to place the telephone call associated with the first
10 PBX phone on hold.

44. The PBX call control method of claim 41, wherein the first message is a call forward command instructing the PBX to transfer the telephone call associated with the first PBX phone to second phone.

15 45. The PBX call control method of claim 44, wherein the second phone is a second PBX phone.

46. The PBX call control method of claim 44, wherein the second phone is a voice-over-
20 IP client.

47. The PBX call control method of claim 46, further comprising the steps of:
transmitting to the PBX a first message for forwarding the telephone call
associated with the first PBX phone to a voice-over-IP client;
25 establishing a voice-over-IP session between the PBX and the voice-over-IP client; and
directing the telephone call to first PBX phone to the first computer interface via the voice-over-IP session.

48. The PBX call control method of claim 41, wherein the call control message is an answer call command instructing the PBX to answer the telephone call using a second device.

5 49. The PBX call control method of claim 48, wherein the second device is a second PBX phone.

50. A private branch exchange (PBX) call control method for a first computer interface operatively coupled to a system comprising a PBX and a first PBX phone, the PBX
10 call control method comprising the steps of:

transmitting to the PBX a group of one or more messages comprising:

a command to the PBX to make a call to a first PBX phone, and

a telephone number of the first PBX phone; and

receiving a first message indicating the hook state of the first PBX phone.

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